

Amendments to the Claims

1. *(Currently Amended)* An array (20) of magnetoresistive memory elements (10) comprising:

~~means for applying a source to apply~~ a current or a voltage for generating a programming magnetic field at a selected magnetoresistive memory element (10s),
a magnetic field sensor unit (50) for measuring an external magnetic field in the vicinity of the selected magnetoresistive memory element (10s), and
~~means (52) for tuning a compensation circuit to tune~~ the current or voltage for compensating locally for the measured external magnetic field during a programming operation.

2. *(Currently Amended)* ~~An array according to claim 1;~~ An array of magnetoresistive memory elements comprising:

means for applying a current or a voltage for generating a programming magnetic field at a selected magnetoresistive memory element,

a magnetic field sensor unit for measuring an external magnetic field in the vicinity of the selected magnetoresistive memory element, and

means for tuning the current or voltage for compensating locally for the measured external magnetic field during a programming operation; and

wherein the magnetic field sensor unit (50) is an analog sensor unit.

3. *(Currently Amended)* ~~An array according to claim 1;~~ The array according to claim 2, wherein the magnetic field sensor unit comprises a plurality of magnetic field sensors (50).

4. *(Currently Amended)* ~~An array (20) according to claim 1;~~ The array according to claim 2, wherein the means for applying the current or voltage comprise at least one current line (14, 15) and means for flowing current (I_{bit} , I_{word}) through the at least one current line.

5. *(Currently Amended)* ~~An array (20) according to claim 1;~~ The array according to claim

2, wherein the magnetic field sensor unit ~~(50)~~ is adapted to generate an output signal ~~(51)~~ representative of the external magnetic field measured.

6. (*Currently Amended*) An array ~~(20)~~ according to claim 4, wherein the means ~~(52)~~ for tuning the current or voltage comprises a compensation circuit for imposing a compensation current (I_{comp_b} , I_{comp_w}) to flow through the at least one current line ~~(14~~, ~~15)~~.

7. (*Currently Amended*) An array ~~(20)~~ according to claim 6, wherein the compensation circuit also imposes a compensation magnetic field at the magnetic field sensor unit ~~(50)~~.

8. (*Currently Amended*) An array ~~(20)~~ according to claim 2, wherein the analog magnetic field sensor unit ~~(50)~~ is an element of the same construction as the magnetoresistive memory elements ~~(10)~~.

9. (*Currently Amended*) An array ~~(20)~~ according to claim 8, wherein the magnetic field sensor unit ~~(50)~~ is more sensitive to magnetic fields than the magnetoresistive memory elements ~~(10)~~.

10. (*Currently Amended*) Method for compensating for the presence of an external magnetic field during programming of a magnetic memory element ~~(10)~~, the programming being performed by applying an current (I_{bit} , I_{word}) or a voltage for generating a programming magnetic field to the magnetic memory element ~~(10)~~, the method comprising:

measuring the external magnetic field in the vicinity of the magnetic memory element ~~(10)~~, and

locally compensating for the external magnetic field during the programming operation by tuning the current (I_{bit} , I_{word}) or voltage for generating the programming magnetic field.

11. (*Currently Amended*) ~~Method according to claim 10;~~ Method for compensating for

the presence of an external magnetic field during programming of a magnetic memory element, the programming being performed by applying an current (I_{bit} , I_{word})) or a voltage for generating a programming magnetic field to the magnetic memory element, the method comprising:

_____ measuring the external magnetic field in the vicinity of the magnetic memory element, and

_____ locally compensating for the external magnetic field during the programming operation by tuning the current (I_{bit} , I_{word}) or voltage for generating the programming magnetic field; and

wherein applying a current of a voltage comprises flowing a current (I_{bit} , I_{word}) through at least one current line (~~14, 15~~).

12. (*Currently Amended*) Method according to claim 11, wherein tuning the current or voltage comprises flowing a current ($I_{bit}+I_{comp_b}$, $I_{word}+I_{comp_w}$) through the at least one current line (~~14, 15~~), which current ($I_{bit}+I_{comp_b}$, $I_{word}+I_{comp_w}$) is different from the current (I_{bit} , I_{word}) which would flow through the at least one current line (~~14, 15~~) when no external magnetic field would be present in order to generate a same programming magnetic field.

13. (*New*) The array according to claim 1, wherein the magnetic field sensor unit is an analog sensor unit.

14. (*New*) The array according to claim 1, wherein the magnetic field sensor unit comprises a plurality of magnetic field sensors.

15. (*New*) The array according to claim 1, wherein the a source to apply a current or a voltage comprises at least one current line and sources for flowing current (I_{bit} , I_{word}) through the at least one current line.

16. *(New)* The array according to claim 1, wherein the magnetic field sensor unit is adapted to generate an output signal representative of the external magnetic field measured.
17. *(New)* The array according to claim 15, wherein a compensation circuit to tune the current or voltage comprises a compensation circuit for imposing a compensation current ($I_{\text{comp_b}}$, $I_{\text{comp_w}}$) to flow through the at least one current line .
18. *(New)* The array according to claim 17, wherein the compensation circuit also imposes a compensation magnetic field at the magnetic field sensor unit.
19. *(New)* The array according to claim 1, wherein the analog magnetic field sensor unit is an element of the same construction as the magnetoresistive memory elements.
20. *(New)* The array according to claim 13, wherein the magnetic field sensor unit is more sensitive to magnetic fields than the magnetoresistive memory elements.